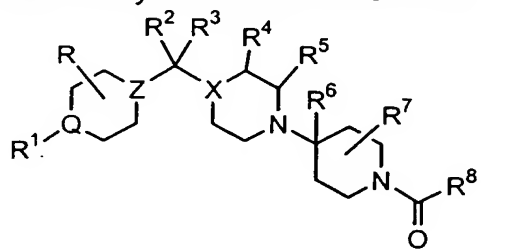


WHAT IS CLAIMED IS:

1. A compound represented by the structural formula I



- 5 or a pharmaceutically acceptable salt or isomer thereof, wherein:

Q, X and Z are independently selected from the group consisting of CH and N, provided that one or both of Q and Z is N;

R, R<sup>4</sup>, R<sup>5</sup>, R<sup>6</sup> and R<sup>7</sup> are independently selected from the group consisting of H and (C<sub>1</sub>-C<sub>6</sub>)alkyl;

- 10 R<sup>1</sup> is H, (C<sub>1</sub>-C<sub>6</sub>)alkyl, fluoro-(C<sub>1</sub>-C<sub>6</sub>)alkyl-, R<sup>9</sup>-aryl(C<sub>1</sub>-C<sub>6</sub>)alkyl-, R<sup>9</sup>-heteroaryl-(C<sub>1</sub>-C<sub>6</sub>)alkyl-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-SO<sub>2</sub>-, (C<sub>3</sub>-C<sub>6</sub>)cycloalkyl-SO<sub>2</sub>-, fluoro-(C<sub>1</sub>-C<sub>6</sub>)alkyl-SO<sub>2</sub>-, R<sup>9</sup>-aryl-SO<sub>2</sub>-, R<sup>9</sup>-heteroaryl-SO<sub>2</sub>-, N(R<sup>22</sup>)(R<sup>23</sup>)-SO<sub>2</sub>-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-C(O)-, (C<sub>3</sub>-C<sub>6</sub>)cycloalkyl-C(O)-, fluoro-(C<sub>1</sub>-C<sub>6</sub>)alkyl-C(O)-, R<sup>9</sup>-aryl-C(O)-, NH-(C<sub>1</sub>-C<sub>6</sub>)alkyl-C(O)- or R<sup>9</sup>-aryl-NH-C(O)-;

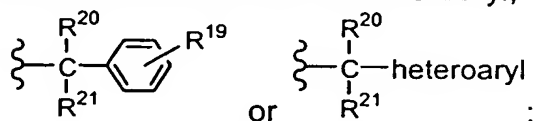
- 15 R<sup>2</sup> is H or (C<sub>1</sub>-C<sub>6</sub>)alkyl, and R<sup>3</sup> is H, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy(C<sub>1</sub>-C<sub>6</sub>)alkyl-, (C<sub>3</sub>-C<sub>10</sub>)-cycloalkyl-, (C<sub>3</sub>-C<sub>10</sub>)cycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkyl-, R<sup>9</sup>-aryl, R<sup>9</sup>-aryl(C<sub>1</sub>-C<sub>6</sub>)alkyl-, R<sup>9</sup>-heteroaryl, or R<sup>9</sup>-heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkyl-, provided that both X and Z are not each N;

or R<sup>2</sup> and R<sup>3</sup> together are =O, =NOR<sup>10</sup>, =N-NR<sup>11</sup>R<sup>12</sup> or =CH(C<sub>1</sub>-C<sub>6</sub>)alkyl, provided that when one or both of X and Z is N, R<sup>2</sup> and R<sup>3</sup> together are not

- 20 =CH(C<sub>1</sub>-C<sub>6</sub>)alkyl;

and when X and Z are each CH, R<sup>3</sup> can also be (C<sub>1</sub>-C<sub>6</sub>)alkoxy, R<sup>9</sup>-aryloxy, R<sup>9</sup>-heteroaryloxy, (C<sub>1</sub>-C<sub>6</sub>)alkyl-C(O)O-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-NH-C(O)O-, N((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>-C(O)O-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-C(O)-NR<sup>13</sup>-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-O-C(O)-NR<sup>13</sup>-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-NH-C(O)-NR<sup>13</sup>- or N((C<sub>1</sub>-C<sub>6</sub>)alkyl)<sub>2</sub>-C(O)-NR<sup>13</sup>-;

- 25 R<sup>8</sup> is (R<sup>14</sup>,R<sup>15</sup>,R<sup>16</sup>)-substituted phenyl, (R<sup>14</sup>,R<sup>15</sup>,R<sup>16</sup>)-substituted 6-membered heteroaryl, (R<sup>14</sup>,R<sup>15</sup>,R<sup>16</sup>)-substituted 6-membered heteroaryl N-oxide, (R<sup>17</sup>,R<sup>18</sup>)-substituted 5-membered heteroaryl, naphthyl, fluorenyl, diphenylmethyl,



R<sup>9</sup> is 1, 2 or 3 substituents independently selected from the group consisting of

- 30 H, halogen, (C<sub>1</sub>-C<sub>6</sub>)alkyl, (C<sub>1</sub>-C<sub>6</sub>)alkoxy, -CF<sub>3</sub>, -OCF<sub>3</sub>, CH<sub>3</sub>C(O)-, -CN, CH<sub>3</sub>SO<sub>2</sub>-, CF<sub>3</sub>SO<sub>2</sub>- and -N(R<sup>22</sup>)(R<sup>23</sup>);

R<sup>10</sup> is H, (C<sub>1</sub>-C<sub>6</sub>)alkyl, fluoro(C<sub>1</sub>-C<sub>6</sub>)alkyl-, (C<sub>3</sub>-C<sub>10</sub>)cycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkyl-, hydroxy(C<sub>2</sub>-C<sub>6</sub>)alkyl-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-O-(C<sub>2</sub>-C<sub>6</sub>)alkyl-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-O-C(O)-(C<sub>1</sub>-C<sub>6</sub>)alkyl- or N(R<sup>22</sup>)(R<sup>23</sup>)-C(O)-(C<sub>1</sub>-C<sub>6</sub>)alkyl-;

5 R<sup>11</sup> and R<sup>12</sup> are independently selected from the group consisting of H, (C<sub>1</sub>-C<sub>6</sub>)alkyl and (C<sub>3</sub>-C<sub>10</sub>)cycloalkyl, or R<sup>11</sup> and R<sup>12</sup> together are C<sub>2</sub>-C<sub>6</sub> alkylene and form a ring with the nitrogen to which they are attached;

R<sup>14</sup> and R<sup>15</sup> are independently selected from the group consisting of (C<sub>1</sub>-C<sub>6</sub>)alkyl, halogen, -NR<sup>22</sup>R<sup>23</sup>, -OH, -CF<sub>3</sub>, -OCH<sub>3</sub>, -O-acyl and -OCF<sub>3</sub>;

10 R<sup>16</sup> is R<sup>14</sup>, hydrogen, phenyl, -NO<sub>2</sub>, -CN, -CH<sub>2</sub>F, -CHF<sub>2</sub>, -CHO, -CH=NOR<sup>24</sup>, pyridyl, pyridyl N-oxide, pyrimidinyl, pyrazinyl, -N(R<sup>24</sup>)CONR<sup>25</sup>R<sup>26</sup>, -NHCONH(chloro-(C<sub>1</sub>-C<sub>6</sub>)alkyl), -NHCONH((C<sub>3</sub>-C<sub>10</sub>)cycloalkyl(C<sub>1</sub>-C<sub>6</sub>)alkyl), -NHCO(C<sub>1</sub>-C<sub>6</sub>)alkyl, -NHCOCF<sub>3</sub>, -NHSO<sub>2</sub>N(R<sup>22</sup>)(R<sup>23</sup>), -NHSO<sub>2</sub>(C<sub>1</sub>-C<sub>6</sub>)alkyl, -N(SO<sub>2</sub>CF<sub>3</sub>)<sub>2</sub>, -NHCO<sub>2</sub>-(C<sub>1</sub>-C<sub>6</sub>)alkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, -SR<sup>27</sup>, -SOR<sup>27</sup>, -SO<sub>2</sub>R<sup>27</sup>, -SO<sub>2</sub>NH(R<sup>22</sup>), -OSO<sub>2</sub>(C<sub>1</sub>-C<sub>6</sub>)alkyl, -OSO<sub>2</sub>CF<sub>3</sub>, hydroxy(C<sub>1</sub>-C<sub>6</sub>)alkyl-, -CON R<sup>24</sup>R<sup>25</sup>,  
15 -CON(CH<sub>2</sub>CH<sub>2</sub>OCH<sub>3</sub>)<sub>2</sub>, -OCONH(C<sub>1</sub>-C<sub>6</sub>)alkyl, -CO<sub>2</sub>R<sup>24</sup>, -Si(CH<sub>3</sub>)<sub>3</sub> or -B(OC(CH<sub>3</sub>)<sub>2</sub>)<sub>2</sub>;

R<sup>17</sup> is (C<sub>1</sub>-C<sub>6</sub>)alkyl, -N(R<sup>22</sup>)(R<sup>23</sup>) or R<sup>19</sup>-phenyl;

R<sup>13</sup>, R<sup>18</sup>, R<sup>22</sup>, R<sup>23</sup>, R<sup>24</sup>, R<sup>25</sup> and R<sup>26</sup> are independently selected from the group consisting of H and (C<sub>1</sub>-C<sub>6</sub>)alkyl;

20 R<sup>19</sup> is 1, 2 or 3 substituents independently selected from the group consisting of H, (C<sub>1</sub>-C<sub>6</sub>)alkyl, -CF<sub>3</sub>, -CO<sub>2</sub>R<sup>25</sup>, -CN, (C<sub>1</sub>-C<sub>6</sub>)alkoxy and halogen;

R<sup>20</sup> and R<sup>21</sup> are independently selected from the group consisting of H and (C<sub>1</sub>-C<sub>6</sub>)alkyl, or R<sup>20</sup> and R<sup>21</sup> together with the carbon to which they are attached form a spiro ring of 3 to 6 carbon atoms; and

R<sup>27</sup> is (C<sub>1</sub>-C<sub>6</sub>)alkyl or phenyl.

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2. A compound of claim 1 wherein Z is CH, and Q and X are each N.

3. A compound of claim 1 wherein R<sup>1</sup> is R<sup>9</sup>-aryl(C<sub>1</sub>-C<sub>6</sub>)alkyl-, R<sup>9</sup>-heteroaryl-(C<sub>1</sub>-C<sub>6</sub>)alkyl-, (C<sub>1</sub>-C<sub>6</sub>)alkyl-SO<sub>2</sub>-, (C<sub>3</sub>-C<sub>6</sub>)cycloalkyl-SO<sub>2</sub>-, fluoro-(C<sub>1</sub>-C<sub>6</sub>)alkyl-SO<sub>2</sub>-,  
30 R<sup>9</sup>-aryl-SO<sub>2</sub>-, or R<sup>9</sup>-aryl-NH-C(O)-.

4. A compound of claim 1 wherein R<sup>2</sup> is hydrogen and R<sup>3</sup> is (C<sub>1</sub>-C<sub>6</sub>)alkyl, R<sup>9</sup>-aryl, R<sup>9</sup>-aryl(C<sub>1</sub>-C<sub>6</sub>)alkyl, R<sup>9</sup>-heteroaryl, or R<sup>9</sup>-heteroaryl(C<sub>1</sub>-C<sub>6</sub>)alkyl.

35 5. A compound of claim 1 wherein R, R<sup>5</sup> and R<sup>7</sup> are each hydrogen and R<sup>6</sup> is -CH<sub>3</sub>.

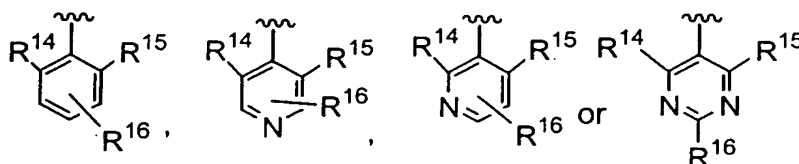
6. A compound of claim 1 wherein X is N and R<sup>4</sup> is methyl.

7. A compound of claim 1 wherein X is CH and R<sup>4</sup> is H.

5 8. A compound of claim 1 wherein R<sup>9</sup> is H, halogen, (C<sub>1</sub>-C<sub>6</sub>)alkyl or (C<sub>1</sub>-C<sub>6</sub>)alkoxy.

9. A compound of claim 1 wherein R<sup>8</sup> is (R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>)-phenyl; (R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>)-pyridyl or an N-oxide thereof; or (R<sup>14</sup>, R<sup>15</sup>, R<sup>16</sup>)-pyrimidyl.

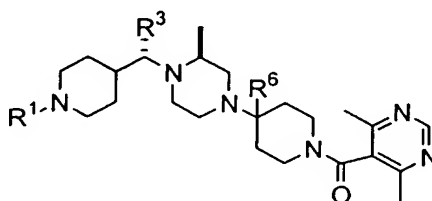
10 10. A compound of claim 8 wherein R<sup>8</sup> is



11. A compound of claim 10 wherein R<sup>14</sup> and R<sup>15</sup> are independently selected from the group consisting of (C<sub>1</sub>-C<sub>6</sub>)alkyl, halogen and NH<sub>2</sub>, and R<sup>16</sup> is H.

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12. A compound of claim 1 selected from the group consisting of compounds of the formula



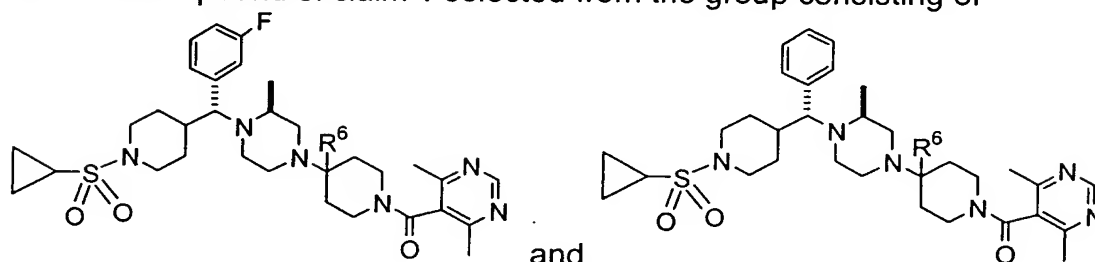
wherein R<sup>1</sup>, R<sup>3</sup> and R<sup>6</sup> are as defined in the following table:

R <sup>1</sup>	R <sup>3</sup>	R <sup>6</sup>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	CH <sub>2</sub> CH <sub>2</sub> CH <sub>3</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
C <sub>6</sub> H <sub>5</sub> NHC(O)	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	H
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>

3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CH <sub>3</sub> CH <sub>2</sub> SO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	4-F-C <sub>6</sub> H <sub>4</sub>	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	4-F-C <sub>6</sub> H <sub>4</sub>	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	4-F-C <sub>6</sub> H <sub>4</sub>	CH <sub>3</sub>
CF <sub>3</sub> C(O)	4-F-C <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	3-F-C <sub>6</sub> H <sub>4</sub>	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	3-F-C <sub>6</sub> H <sub>4</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	3-F-C <sub>6</sub> H <sub>4</sub>	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	4-F-C <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	4-F-C <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	4-F-C <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	2-thienyl	CH <sub>3</sub>
CF <sub>3</sub> CH <sub>2</sub> SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CF <sub>3</sub> SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	3-thienyl	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	2-thienyl	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	2-thienyl	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	2-thienyl	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	3-thienyl	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	3-thienyl	CH <sub>3</sub>
4-F-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
2-thienyl-SO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
C <sub>6</sub> H <sub>5</sub> SO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CF <sub>3</sub> SO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CF <sub>3</sub> CH <sub>2</sub> SO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
(CH <sub>3</sub> ) <sub>2</sub> NSO <sub>2</sub>	CH <sub>2</sub> C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
cyclopropyl-SO <sub>2</sub>	3-F-C <sub>6</sub> H <sub>4</sub>	CH <sub>3</sub>
4-F-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	3-F-C <sub>6</sub> H <sub>4</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	n-Butyl	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	n-Butyl	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	n-Butyl	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	3-pyridyl	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	3-pyridyl	CH <sub>3</sub>
3-Cl-C <sub>6</sub> H <sub>4</sub> SO <sub>2</sub>	2-pyridyl	CH <sub>3</sub>
cyclopropyl-SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>

CH <sub>3</sub> CH <sub>2</sub> SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
i-propyl-SO <sub>2</sub>	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CH <sub>3</sub> C(O)	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
cyclopropyl-C(O)	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
CH <sub>3</sub> CH <sub>2</sub> C(O)	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
i-propyl-C(O)	C <sub>6</sub> H <sub>5</sub>	CH <sub>3</sub>
4-CH <sub>3</sub> OC <sub>6</sub> H <sub>4</sub> CH <sub>2</sub>	3,5-difluorophenyl	CH <sub>3</sub>
cyclopropyl-SO <sub>2</sub>	3,5-difluorophenyl	CH <sub>3</sub>
CH <sub>3</sub> SO <sub>2</sub>	cyclohexyl	CH <sub>3</sub>

13. A compound of claim 1 selected from the group consisting of



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14. A pharmaceutical composition comprising an effective amount of a compound of claim 1 in combination with a pharmaceutically acceptable carrier.

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15. A pharmaceutical composition comprising an effective amount of a compound of claim 1, in combination with one or more antiviral or other agents useful in treating HIV, or in combination with one or more agents useful in treating solid organ transplant rejection, graft v. host disease, arthritis, rheumatoid arthritis, inflammatory bowel disease, atopic dermatitis, psoriasis, asthma, allergies or multiple sclerosis, in combination with a pharmaceutically acceptable carrier.

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16. A method of treating Human Immuno-deficiency Virus comprising administering to a mammal in need of such treatment an effective amount of a compound of claim 1.

20

17. A method of treating Human Immuno-deficiency Virus comprising administering to a mammal in need of such treatment an effective amount of a

compound of claim 1 in combination with one or more antiviral or other agents useful in the treatment of Human Immuno-deficiency Virus

- 5 18. A method of treating solid organ transplant rejection, graft v. host disease, arthritis, rheumatoid arthritis, inflammatory bowel disease, atopic dermatitis, psoriasis, asthma, allergies or multiple sclerosis, comprising administering to a mammal in need of such treatment an effective amount of a compound of claim 1.
- 10 19. A method of treating solid organ transplant rejection, graft v. host disease, arthritis, rheumatoid arthritis, inflammatory bowel disease, atopic dermatitis, psoriasis, asthma, allergies or multiple sclerosis, comprising administering to a mammal in need of such treatment an effective amount of a compound of claim 1 in combination with one or more agents useful in the treatment of solid organ transplant rejection, graft v. host disease, arthritis, rheumatoid arthritis, inflammatory bowel disease, atopic  
15 dermatitis, psoriasis, asthma, allergies or multiple sclerosis.
- 20 20. A kit comprising in separate containers in a single package pharmaceutical compositions for use in combination to treat Human Immunodeficiency Virus which comprises in one container a pharmaceutical composition comprising an effective amount of a compound of claim 1 in a pharmaceutically acceptable carrier, and in separate containers, one or more pharmaceutical composition comprising an effective amount of a antiviral or other agent useful in the treatment of Human Immunodeficiency Virus in a pharmaceutically acceptable carrier.